

S/N: 10/649,012
Page 2 of 7

CLAIM LISTING

The following claim listing is intended to replace previous claim listings.

Claim 1 is amended.

Claim 13 is canceled.

Claim 14 is new.

1. (Currently Amended) A hydrocarbon sensor comprising a substrate made of a solid electrolyte that conducts protons, and a pair of electrodes formed on the substrate,
wherein at least one electrode of the pair of electrodes contains Au and Al,
at least part of the Al is present in the at least one electrode as at least one selected from the group consisting of elemental aluminum and aluminum oxide, and assuming that a content of elemental Al in the at least one electrode is "a" mol%, and a content of aluminum oxide in the at least one electrode is "b" mol%, "a" and "b" satisfy a relationship: $a + 2b \leq 7$,

at least one of the elemental aluminum and aluminum oxide is contained in a mixed state in the at least one electrode, and

the at least one electrode contains at least one metal selected from the group consisting of an AuAl_2 alloy and elemental Au, wherein the total mol% of the metals selected from the group is at least 50 mol%.

2. (Canceled)

S/N: 10/649,012
Page 3 of 7

3. (Previously Presented) A hydrocarbon sensor according to claim 1, wherein the at least one electrode contains AuAl_2 and elemental Au in a molar ratio of $\text{AuAl}_2 : \text{Au} = X : 1-X$, where X is at least 0.6 and less than 1.

4-13. (Canceled)

14. (New) A hydrocarbon sensor according to claim 1, wherein the AuAl_2 alloy and the at least one of elemental aluminum and aluminum oxide are contained in a mixed state in the at least one electrode.